

2013 UDOT RESEARCH PROBLEM STATEMENT

*** Problem statement deadline is March 25, 2013. Submit statements to Steve Bagley at sbagley@utah.gov ***

Problem Title: Innovative Display of Transportation Analysis and Results

No. :UT-13.06.05

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UDOT Champion (suggested): John Thomas

Select a Subject Area

☐ Materials/Pavements

☐ Maintenance

☐ Traffic Mgmt/Safety

☐ Geotechnical

☐ Preconstruction

☒ Planning/Asset Mgmt

☐ Transportation Innovation

1. Describe the problem to be addressed.

The mission of the Utah Department of Transportation (UDOT) is to preserve infrastructure, optimize mobility, improve safety (zero fatalities), and strengthen the economy. To help meet the mission of the department and to improve the quality of life and economic vitality of the state, the Systems Planning and Programming Division helps to (among other things) identify important transportation needs and establish transportation plans that will provide solutions to these needs. This is primarily accomplished through the Long-range Plan (LRP) and Statewide Transportation Improvement Program (STIP). One of the challenges with developing and implementing the plans is communicating to both internal (UDOT) and external (public) stakeholders the transportation analysis and plan results. The purpose of this research is to identify ways and develop a tool to communicate through Graphical Information Systems (GIS) and other graphical interfaces the needs of the state (e.g., congested areas, safety concerns), how the LRP addresses these needs, and how the STIP implements the solutions. The primary reasons to develop such a tool would be to make project delivery more efficient and to better communicate transportation problems, solutions, and implementation to the number one client of UDOT; the public.

2. Describe why this research is important and how it is unique.

UDOT will benefit from this project by better communicating transportation needs and proposed solutions. One of the challenges that face transportation professionals, particularly transportation planners, is the ability to communicate the needs and proposed solutions to transportation projects to stakeholders internal and external to the agency. This will provide UDOT with a tool to address this need.

3. List the research objective(s) to be accomplished:

1. Identify methods to communicate graphically the transportation needs of the state.
2. Develop a GIS interface tool to help communicate these needs.
3. Coordinate with UDOT Planning the integration of the interface.

4. List the major tasks to accomplish the research objective(s):

1. Develop a project scope of work and detailed estimate.
2. Perform literature review on graphical communication of transportation solutions.
3. Explore and evaluate data to interface with the tool.
4. Identify ways to integrate the proposed tool through UPlan.
5. Make recommendations on the tool and provide a prototype GIS tool.
6. Report results to UDOT in the form of a written report.

5. List the deliverable(s) to come to UDOT from this research study:

1. Engineering report documenting the literature review and research results.
2. Prototype GIS tool to graphically communicate transportation needs and solutions.

6. Describe how the results of this study will be implemented at UDOT.

This research would be implemented by the UDOT Planning Division to communicate the needs and solutions for transportation projects. The results of the research would assist UDOT in better communicating to both internal (UDOT) and external (public) stakeholders the proposed solutions to transportation needs and ultimately to help meet the mission of UDOT.

7. Estimated cost - Total: \$60,000

UDOT Share: \$60,000

Other/Matching Funds: \$

8. Outline the proposed schedule for this study, including estimated start date, duration, and major event dates.

It is recommended that this project begin in later summer or early Fall 2013 with the initial tasks of the project scope of work and detailed estimate, followed with the literature review. The work will continue according to the tasks outlined previously. It is anticipated that the project would take 12-16 months.

